MATH 1030	DERIVATIVES PRACTICE

1. $f(x) = 3x^2 - \ln(x) + e^x + 5x - 2$
2. $f(x) = \sqrt{x} + \frac{2}{x} - 3x^5$
3. $y = x^3 e^x$
4. $y = \frac{x^2+1}{x^3-2x+1}$
5. $y = (\ln(x) + 2x - 7)^4$
6. $f(x) = \ln\left(\frac{x^2-2}{e^{3x}}\right)$
7. $y = \ln(4x^3(x^2+1))$
8. $f(x) = \frac{\sqrt{x}}{x^3} + e^{-2x+\ln(3x)}$
9. $f(x) = \ln(\sqrt{x^3 - x} + e^{5x})$
10. $y = e^{e^{e^x}}$
11. $y = x^3 \ln(x+3)e^{-x}$
12. $f(x) = \frac{\ln(3x+2)}{e^x+x}$
13. $y = \ln(\sqrt{x}e^{x^2-2x})$
14. $f(x) = (\ln(e^x + 1))^4$

Find an equation for the line tangent to $y = f(x)$ at the given point.

$y = x^2, \quad x = 2$ $\qquad$ $y = \ln(x), \quad x = 1$

$y = e^x, \quad x = 0$ $\qquad$ $y = \sqrt{x}, \quad x = 9$